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ARMY ELECTRONICS COMMAND WHITE SANDS MISSILE RANGE N--ETC F/G 4/2
12832A LANCE MISSILE NO. 3324, ROUND NO. 321 ACT, 20 OCTOBER 19--ETC(U)
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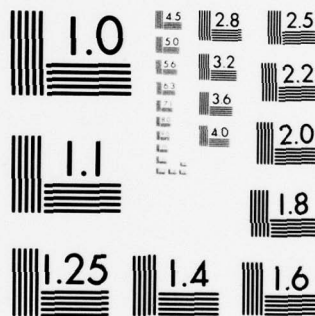
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METEOROLOGICAL DATA REPORT

12832A LANCE
MISSILE NO. 3324, ROUND NO. 321 ACT
(20 OCTOBER 1978)

BY

WSMR METEOROLOGICAL TEAM

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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) METEOROLOGICAL DATA GATHERED FOR THE LAUNCHING OF 12832A LANCE, MISSILE NUMBER 3324, ROUND NUMBER 321 ACT, ARE PRESENTED IN TABULAR FORM.		

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INTRODUCTION

12832A Lance, Missile Number 3324, Round Number 321 ACT, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1512 HRS MST, 20 October 1978. The scheduled launch time was 1500 HRS MST.

DISCUSSION

Meteorological data were recorded and reduced by the WSMR Meteorological Team, Atmospheric Sciences Laboratory (ASL), WSMR, New Mexico. The data are presented in the following tabulations.

ELEVATION	3,977.30	FEET/MSL
PRESSURE	884.9	MBS
TEMPERATURE	26.5	°C
RELATIVE HUMIDITY	30	%
DEW POINT	7.5	°C
DENSITY	1,022	GM/M ³
WIND SPEED	CALM	MPH
WIND DIRECTION	CALM	DEGREES
CLOUD COVER	5 2	Ac Cs

TABLE I. SURFACE OBSERVATIONS TAKEN AT LC-33,
1500 HRS MST/20 OCTOBER 1978.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)	HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	CALM	CALM	2100	174	09.5
100	CALM	CALM	2200	180	09.5
200	CALM	CALM	2300	180	10.0
300	180	00.5	2400	169	10.0
400	185	06.0	2500	175	11.0
500	183	09.0	2600	173	12.0
600	188	10.5	2700	171	12.5
700	190	11.0	2800	176	13.0
800	189	12.0	2900	176	14.0
900	187	12.5	3000	176	15.0
1000	187	12.5	3100	174	15.0
1100	185	11.5	3200	176	14.5
1200	183	11.0	3300	180	14.0
1300	183	10.0	3400	184	14.5
1400	192	09.5	3500	184	14.0
1500	192	09.5	3600	187	13.0
1600	183	09.5	3700	189	13.0
1700	180	10.0	3800	193	13.0
1800	172	11.0	3900	196	13.0
1900	169	10.5	4000	196	13.0
2000	172	10.5	4100	198	13.0

TABLE II. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 1
RELEASED FROM LC-33, AT 1450 HRS MST/20 OCTOBER 1978
12832A LANCE, MISSILE NO. 3324, ROUND NO. 321 ACT

FIBAL RELEASE POINT WSTM COORDINATES:

X = 486,037.24 Y = 182,350.16 Z = 3,977.30

APPROXIMATELY: 1/2 MILE SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)	HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
4200	198	12.5	6600	209	13.0
4300	200	11.5	6700	209	12.5
4400	205	11.5	6800	209	12.5
4500	208	12.0	6900	212	12.5
4600	205	13.0	7000	211	13.0
4700	203	14.0	7100	210	12.0
4800	203	14.0	7200	210	12.5
4900	203	14.0	7300	212	13.0
5000	202	16.0	7400	214	14.5
5100	200	16.0	7500	214	15.0
5200	201	15.5	7600	218	14.0
5300	203	15.0	7700	218	14.5
5400	206	15.0	7800	220	15.5
5500	207	15.0	7900	220	15.5
5600	209	15.5	8000	220	15.5
5700	211	15.5	8100	226	15.0
5800	210	16.0	8200	235	14.5
5900	211	15.5	8300	237	15.5
6000	212	15.5	8400	238	16.0
6100	210	15.0	8500	237	15.5
6200	208	16.0	8600	235	16.0
6300	209	15.5	8700	237	16.5
6400	208	15.0	8800	242	17.0
6500	209	14.5	8900	237	18.5

TABLE II. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)	HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	CALM	CALM	2100	176	13.0
100	CALM	CALM	2200	178	13.5
200	CALM	CALM	2300	180	13.5
300	153	04.5	2400	178	13.5
400	173	08.0	2500	178	14.0
500	180	08.5	2600	180	14.0
600	183	08.5	2700	182	13.5
700	186	09.0	2800	182	12.0
800	188	10.5	2900	185	11.0
900	185	11.5	3000	190	11.0
1000	185	11.5	3100	191	10.5
1100	180	12.5	3200	190	11.0
1200	167	14.0	3300	187	11.5
1300	163	13.5	3400	190	11.5
1400	167	13.0	3500	193	11.5
1500	165	13.5	3600	193	11.0
1600	166	14.5	3700	198	11.5
1700	165	14.0	3800	198	11.5
1800	166	12.5	3900	195	11.5
1900	173	12.0	4000	195	11.5
2000	175	12.5	4100	195	12.0

TABLE III. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 2
RELEASED FROM LC-33, AT 1500 HRS MST/20 OCTOBER 1978
12832A LANCE, MISSILE NO. 3324, ROUND NO. 321 ACT

PIBAL RELEASE POINT WSTM COORDINATES:

x = 486,037.24 y = 182,350.16 z = 3,977.30

APPROXIMATELY: 1/2 MILE SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
4200	198	11.5
4300	200	11.5
4400	199	12.0
4500	198	12.5
4600	201	13.0
4700	203	13.0
4800	203	12.5
4900	199	14.0
5000	194	15.0
5100	191	15.5
5200	188	15.0
5300	187	16.0
5400	191	15.5
5500	194	15.0
5600	195	13.5
5700	197	13.5
5800	198	14.0
5900	200	14.5
6000	200	14.5
6100	201	14.0
6200	206	14.0
6300	204	15.0
6400	207	14.5
6500	210	15.0

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
6600	212	14.0
6700	209	12.5
6800	209	12.5
6900	207	14.5
7000	208	15.0
7100	209	14.5
7200	209	14.5
7300	211	14.5
7400	212	14.0
7500	213	15.0
7600	206	18.5
7700	207	17.0
7800	205	15.5
7900	211	15.5
8000	213	15.5
8100	219	16.0
8200	225	15.5
8300	229	14.5
8400	235	16.0
8500	231	14.0
8600	233	15.0
8700	235	16.0
8800	239	17.5
8900	241	20.5

TABLE III. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
9000	240	20.0
9100	240	20.0
9200	243	19.5
9300	243	20.0
9400	243	20.0
9500	243	20.0
9600	243	19.0
9700	241	18.5
9800	237	18.5
9900	237	19.0
10000	237	20.0
10100	238	20.0
10200	238	19.5
10300	236	18.5
10400	239	19.5
10500	240	19.0
10600	241	18.5
10700	242	17.0
10800	243	16.5
10900	241	16.5
11000	241	18.5
11100	243	18.0
11200	244	16.0
11300	244	16.0

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
11400	243	19.5
11500	240	22.0
11600	238	22.0
11700	239	21.0
11800	238	22.5
11900	237	24.0
12000	238	24.5

TABLE III. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

TIME (SEC)	SPEED (MPH)	DIR DEG
-30.0	09.0	215
-20.0	09.0	206
-10.0	11.0	197
00.0	09.0	192
+10.0	07.0	188

TABLE IV. ANEMOMETER MEASURED WIND SPEED AND DIRECTION, POLE NO. 1
RELEASED FROM LC-33, AT 1500 HRS MST/20 OCTOBER 1978
12832A LANCE, MISSILE NO. 3324, ROUND NO. 321 ACT

WSTM COORDINATES: $X = 485,874.29$ $Y = 185,958.90$ $Z = 4,018.74$

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

TIME (SEC)	SPEED (MPH)	DIR DEG
-30.0	13.0	266
-20.0	10.0	261
-10.0	11.0	265
00.0	08.0	235
+10.0	10.0	243

TABLE V. ANEMOMETER MEASURED WIND SPEED AND DIRECTION, POLE NO. 2
RELEASED FROM LC-33, AT 1500 HRS MST/20 OCTOBER 1978
12832A LANCE, MISSILE NO. 3324, ROUND NO. 321 ACT

WSTM COORDINATES: X = 485,874.93 Y = 186,012.00 Z = 4,033.57

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

TIME (SEC)	SPEED (MPH)	DIR DEG
-30.0	10.0	212
-20.0	10.0	195
-10.0	10.0	206
00.0	08.0	182
+10.0	07.0	180

TABLE VI. ANEMOMETER MEASURED WIND SPEED AND DIRECTION, POLE NO. 3
RELEASED FROM LC-33, AT 1500 HRS MST/20 OCTOBER 1978
12832A LANCE, MISSILE NO. 3324, ROUND NO. 321 ACT

WSTM COORDINATES: X = 485,877.29 Y = 186,116.06 Z = 4,063.92

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

SIGNIFICANT LEVEL DATA
2930020099
WHITE SANDS
TABLE VII.

STATION ALTITUDE 3989.00 FEET MSL
20 OCT. 78 1400 HRS MST
ASCENSION NO. 699

PRESSURE	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
682.4	3989.0	25.0	6.7	31.0
650.0	5058.8	20.8	6.4	39.0
792.4	7034.4	15.8	4.5	47.0
724.8	9507.2	12.1	1.4	48.0
700.0	10400.7	8.9	-1.5	48.0
642.6	12769.9	4.0	-3.3	59.0
635.8	13138.4	3.2	-0.6	76.0
607.6	14202.8	1.9	-1.7	77.0
598.6	14650.2	1.7	-5.0	61.0
581.0	15410.5	-1.1	-5.7	71.0
565.2	16167.6	-3.3	-7.1	75.0
540.6	17314.3	-4.6	-9.0	71.0
516.8	18490.2	-4.7	-15.0	42.0
509.2	18873.6	-4.8	-20.5	28.0
500.0	19344.5	-5.7	-19.7	32.0
485.6	20096.0	-7.2	-20.0	35.0
478.2	20489.2	-8.0	-23.7	27.0
441.0	22538.3	-13.5	-20.4	56.0
424.3	23500.4	-16.1	-19.8	73.0
405.6	24612.4	-18.6	-29.6	37.0
400.0	24953.1	-19.4	-35.2	23.0
391.8	25459.4	-19.7	-37.5	18.0
345.8	28405.5	-27.3	-41.2	25.0
339.4	28907.5	-28.3	-37.9	39.0
330.6	29526.4	-29.5	-31.6	42.0
300.0	31764.3	-34.8	-44.0	38.0
285.6	32910.3	-36.9	-49.3	26.0
250.0	35020.5	-45.3		
226.2	36900.7	-50.6		
200.0	40679.7	-55.2		

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GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

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SIGNIFICANT LEVEL DATA

2930020699
 WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL
 20 OCT. 78
 ASCENSION NO. 699

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
189.0	41867.7	-56.0	
159.0	45433.9	-62.3	
150.0	46621.7	-63.6	
135.6	48615.9	-67.5	

STATION ALTITUDE 3989.00 FEET MSL
20 OCT. 78
ASCENSION NO. 699

UPPER AIR DATA
2930020699
WHITE SANDS
TABLE VIII.

GEODETIC COORDINATES
32.40043 LAT DEG
106.57033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3989.0	982.4	25.0	31.0	1026.7	674.1	180.0	2.1	1.000271
4000.0	882.1	25.0	31.1	1026.4	674.1	180.0	2.2	1.000271
4500.0	866.8	23.0	34.8	1015.3	671.9	180.0	3.4	1.000269
5000.0	851.7	21.0	38.6	1004.3	669.6	180.0	4.7	1.000266
5500.0	836.8	19.7	40.6	991.3	668.1	181.1	6.0	1.000262
6000.0	822.1	18.4	42.8	978.1	666.6	181.2	7.2	1.000258
6500.0	807.6	17.2	44.8	965.1	665.1	181.3	8.5	1.000255
7000.0	793.4	15.9	46.9	952.4	663.7	185.0	9.6	1.000251
7500.0	779.2	15.1	47.2	936.0	662.7	192.0	10.7	1.000246
8000.0	765.3	14.4	47.4	923.7	661.8	195.3	11.7	1.000241
8500.0	751.6	13.6	47.6	909.7	660.9	197.0	12.5	1.000237
9000.0	738.2	12.9	47.8	895.8	660.0	199.3	12.6	1.000233
9500.0	725.0	12.1	48.0	882.2	659.2	202.5	12.5	1.000228
10000.0	711.9	10.4	48.0	871.6	657.1	208.7	11.7	1.000223
10500.0	699.0	8.8	48.2	861.0	655.1	213.4	11.5	1.000218
11000.0	686.2	7.8	50.6	846.4	653.9	216.5	11.5	1.000215
11500.0	673.6	6.7	53.0	830.0	652.7	222.1	12.2	1.000211
12000.0	661.2	5.6	55.3	823.6	651.4	228.6	13.4	1.000208
12500.0	649.1	4.6	57.7	811.0	650.2	233.6	14.8	1.000205
13000.0	637.1	3.5	60.6	799.0	649.0	237.4	16.3	1.000205
13500.0	625.3	2.8	76.3	786.7	648.3	239.6	17.2	1.000204
14000.0	613.6	2.2	76.6	773.7	647.6	240.7	17.9	1.000200
14500.0	602.2	1.8	67.2	760.6	646.9	241.6	18.7	1.000193
15000.0	590.9	.4	65.6	750.3	645.2	242.7	19.7	1.000188
15500.0	579.8	-1.4	71.5	741.3	643.1	239.2	21.3	1.000185
16000.0	568.8	-2.8	74.1	731.2	641.3	235.9	23.1	1.000182
16500.0	558.0	-3.7	73.8	719.7	640.3	236.3	25.5	1.000178
17000.0	547.4	-4.2	72.1	707.6	639.6	239.9	27.6	1.000174
17500.0	536.9	-4.6	66.4	695.1	639.1	239.5	26.5	1.000170
18000.0	526.7	-4.7	54.1	682.2	638.9	238.3	25.1	1.000164

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STATION ALTITUDE 3989.00 FEET MSL
20 OCT. 78 1400 HRS MST
ASCENSION NO. 699

UPPER AIR DATA
2930020699
WHITE SAHUS

GEODETTIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (IN)	SPEED KNOTS	INDEX OF REFRACTION
18500.0	516.6	-4.7	-15.7	41.6	669.5	636.7	232.0	22.2	1.000159
19000.0	506.7	-5.0	-20.2	29.1	657.6	638.2	224.1	19.6	1.000153
19500.0	497.0	-6.0	-19.8	32.6	647.5	637.1	223.0	19.3	1.000151
20000.0	487.4	-7.0	-20.0	34.6	637.4	635.9	222.4	19.2	1.000149
20500.0	476.0	-8.0	-23.6	27.2	627.6	634.6	223.5	20.2	1.000145
21000.0	466.6	-9.4	-22.2	34.2	616.4	633.0	224.5	21.4	1.000143
21500.0	459.5	-10.7	-21.3	41.3	609.4	631.4	223.6	22.0	1.000142
22000.0	450.5	-12.1	-20.7	48.4	600.5	629.8	222.7	22.6	1.000140
22500.0	441.7	-13.4	-20.4	55.5	591.7	628.2	221.4	23.2	1.000139
23000.0	432.9	-14.7	-20.0	64.2	583.0	626.6	220.1	23.9	1.000137
23500.0	424.3	-16.1	-19.8	73.0	574.4	625.0	219.3	24.8	1.000135
24000.0	415.8	-17.2	-23.7	56.8	565.5	623.5	218.5	24.9	1.000131
24500.0	407.5	-18.3	-28.4	40.6	556.8	622.0	217.6	24.1	1.000127
25000.0	399.2	-19.4	-35.4	22.5	548.0	620.6	216.9	23.3	1.000124
25500.0	391.1	-19.8	-37.9	18.1	537.7	620.2	216.3	22.6	1.000121
26000.0	383.1	-21.1	-38.4	19.3	529.3	618.6	215.6	23.1	1.000119
26500.0	375.2	-22.3	-38.9	20.4	521.0	617.0	214.9	24.0	1.000117
27000.0	367.5	-23.6	-39.4	21.6	512.9	615.5	213.5	24.7	1.000115
27500.0	360.0	-24.9	-40.0	22.8	504.9	613.9	213.1	25.4	1.000114
28000.0	352.6	-26.1	-40.6	23.9	497.1	612.4	212.4	26.9	1.000112
28500.0	345.3	-27.4	-40.9	26.1	489.3	610.8	222.4	28.6	1.000110
29000.0	338.1	-28.5	-38.6	45.4	481.2	609.3	226.6	30.7	1.000109
29500.0	331.0	-29.4	-31.8	60.2	472.9	608.3	230.3	33.1	1.000108
30000.0	323.9	-30.6	-33.9	72.8	465.1	606.8	231.3	35.1	1.000106
30500.0	317.0	-31.8	-36.4	63.0	457.4	605.3	231.6	36.9	1.000104
31000.0	310.3	-33.0	-39.2	53.3	449.9	603.8	232.2	38.8	1.000102
31500.0	303.7	-34.1	-42.2	43.3	442.5	602.4	232.6	40.7	1.000100
32000.0	297.2	-35.2	-45.0	35.7	435.0	601.0	234.4	42.6	1.000098
32500.0	290.8	-36.1	-47.3	30.4	427.3	599.8	236.5	44.7	1.000096
33000.0	284.5	-37.2	-49.8	25.2**	419.9	598.5	237.1	46.0	1.000094

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

UPPER AIR DATA
2930020099
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL
20 OCT. 78
ASCENSION NO. 099

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

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GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
33500.0	278.2	-38.6	-52.8	20.9**	413.1	590.7	236.0	46.5	1.000092
34000.0	272.0	-40.0	-55.7	16.5**	400.4	594.9	235.9	47.0	1.000091
34500.0	266.0	-41.4	-59.3	12.1**	399.8	593.1	236.7	47.4	1.000089
35000.0	260.1	-42.8	-63.8	7.8**	393.4	591.3	237.4	48.3	1.000088
35500.0	254.4	-44.2	-70.7	3.4**	387.1	589.5	238.1	49.6	1.000086
36000.0	248.7	-45.6			380.8	587.7	238.5	51.1	1.000085
36500.0	243.1	-46.8			374.2	586.1	238.7	52.7	1.000083
37000.0	237.6	-48.1			367.7	584.5	240.5	54.6	1.000082
37500.0	232.2	-49.3			361.3	582.8	243.4	57.0	1.000080
38000.0	226.9	-50.6			355.1	581.2	246.4	59.5	1.000079
38500.0	221.6	-51.4			348.2	580.1	249.4	61.7	1.000078
39000.0	216.4	-52.3			341.4	578.9	251.7	63.9	1.000076
39500.0	211.4	-53.2			334.6	577.8	252.2	65.3	1.000075
40000.0	206.5	-54.0			328.3	576.7	252.7	66.6	1.000073
40500.0	201.7	-54.9			321.9	575.5	252.5	67.9	1.000072
41000.0	197.0	-55.4			315.1	574.9	252.3	69.3	1.000070
41500.0	192.3	-55.8			308.2	574.4	253.0	70.9	1.000069
42000.0	187.8	-56.2			301.6	573.8	253.7	72.6	1.000067
42500.0	183.3	-57.1			295.6	572.6	253.6	75.0	1.000066
43000.0	178.9	-58.0			289.7	571.4	253.3	77.6	1.000065
43500.0	174.6	-58.9			283.9	570.3	253.1	78.0	1.000063
44000.0	170.5	-59.8			278.3	569.1	252.7	77.2	1.000062
44500.0	166.4	-60.6			272.8	567.9	252.6	75.7	1.000061
45000.0	162.4	-61.5			267.4	566.7	253.4	73.2	1.000060
45500.0	158.5	-62.4			262.0	565.6	254.2	70.7	1.000058
46000.0	154.7	-62.9			256.3	564.9	255.7	67.6	1.000057
46500.0	150.9	-63.5			250.7	564.1	257.4	64.6	1.000056
47000.0	147.2	-64.3			245.6	563.0			1.000055
47500.0	143.6	-65.3			240.7	561.6			1.000054
48000.0	140.0	-66.3			235.8	560.3			1.000053

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

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STATION ALTITUDE 3989.00 FEET MSL		UPPER AIR DATA		GEODETIC COORDINATES	
20 OCT. 78		2930020699		32.40043 LAT DEG	
ASCENSION NO. 699		WHITE SANDS		106.37033 LON DEG	
GEOMETRIC ALTITUDE	PRESSURE	TEMPERATURE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS
MSL FEET	MILLIBARS	AIR DEGREE CENTIGRADE			WIND DATA DIRECTION DEGREES (IN) SPEED KNOTS
48500.0	136.6	-67.3		231.1	559.0
					INDEX OF REFRACTION
					1.000051

STATION ALTITUDE 3489.00 FEET MSL
20 OCT. 78
ASCENSION NO. 699

MANDATORY LEVELS
2930020699
WHITE SANDS
TABLE IX.

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PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5055.	20.8	6.4	39.	160.9	4.8
800.0	6762.	16.5	4.8	40.	161.3	9.2
750.0	8550.	13.5	2.6	48.	197.3	12.6
700.0	10450.	8.9	-1.5	40.	213.2	11.5
650.0	12450.	4.7	-3.0	50.	233.2	14.7
600.0	14500.	1.7	-4.5	63.	242.0	10.9
550.0	16850.	-4.1	-8.3	73.	259.7	27.4
500.0	19317.	-5.7	-19.7	32.	223.2	19.4
450.0	21997.	-12.1	-20.7	49.	222.7	22.6
400.0	24911.	-19.4	-35.2	23.	217.0	23.4
350.0	28127.	-26.6	-40.6	24.	220.4	27.4
300.0	31720.	-34.8	-44.0	38.	253.3	41.7
250.0	35811.	-45.3			238.5	50.6
200.0	40520.	-55.2			252.4	68.4
175.0	43359.	-58.6			253.1	78.1
150.0	46495.	-63.6			257.7	64.0

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STATION ALTITUDE 3989.00 FEET MSL
20 OCT. 78 1400 HRS MST
ASCENSION NO. 699

MRN MANDATORY LEVELS
2930020699
WHITE SANDS
TABLE X.

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

GEOPOTENTIAL ALTITUDE DECAMETERS	DIRECTION DEG (TN)	WIND DATA		E-W MPS	DEW PT DEG C	TEMPERATURE		PRESSURE MILLIBARS
		SPEED MPS	U-S MPS			AIR DEG C		
1417.	256.	35.	7.	32.	99	-63.6		1.500+2
1322.	253.	40.	12.	30.	99	-58.8		1.750+2
1237.	252.	35.	11.	34.	99	-55.2		2.000+2
1092.	238.	20.	14.	22.	99	-45.3		2.500+2
967.	233.	21.	13.	17.	09	-34.8		3.000+2
857.	220.	14.	11.	9.	14	-26.6		3.500+2
759.	217.	12.	10.	7.	16	-19.4		4.000+2
670.	223.	12.	9.	0.	09	-12.1		4.500+2
589.	223.	10.	7.	7.	14	-5.7		5.000+2
514.	240.	14.	7.	12.	04	-4.1		5.500+2
444.	242.	10.	5.	9.	00	1.7		6.000+2
379.	233.	0.	5.	0.	08	4.7		6.500+2
319.	213.	0.	5.	5.	10	8.9		7.000+2
261.	197.	0.	0.	2.	11	13.5		7.500+2
206.	181.	5.	5.	0.	12	16.5		8.000+2
154.	181.	2.	2.	0.	14	20.8		8.500+2

STATION ALTITUDE 4010.40 FEET MSL
20 OCT. 78
ASCENSION NO. 45

SIGNIFICANT LEVEL DATA
2930220045
11W 30

GEODETIC COORDINATES
32.88497 LAT DEG
106.49714 LON DEG

TABLE XI.

PRESSURE	GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
880.3	4010.4	25.6	5.8	28.0
874.0	4216.7	22.9	7.8	38.0
850.0	5011.3	21.4	7.8	41.0
771.8	7727.3	14.8	4.5	50.0
709.0	10415.6	9.0	-1.1	53.0
614.9	13893.5	1.4	-2.9	73.0
606.3	14272.7	1.3	-6.0	58.0
550.2	16824.8	-3.0	-6.3	78.0
510.6	18761.3	-5.9	-18.8	35.0
500.0	19300.8	-6.9	-19.7	35.0
488.0	19924.5	-6.9	-17.3	43.0
450.8	21942.2	-11.7	-20.5	48.0
415.6	25909.7	-17.3	-35.3	19.0
400.0	24911.0	-18.5	-36.3	19.0
356.0	27731.1	-25.8	-34.6	43.0
337.2	29018.3	-28.5	-32.5	68.0
325.2	29871.1	-29.8	-32.6	75.0
319.0	30321.9	-30.9	-37.3	53.0
300.0	31745.1	-34.5	-40.7	53.0
290.0	32524.0	-36.0	-44.9	39.0
278.6	33437.0	-38.3	-49.3	30.0
250.0	35554.3	-45.3		
217.0	38913.5	-52.2		
200.0	40644.5	-55.9		
189.4	41705.6	-56.2		
156.4	45737.4	-62.5		

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UPPER AIR DATA
2930220045
NW 30
TABLE XII.

STATION ALTITUDE 4010.40 FEET MSL
20 OCT. 78 1400 HRS MST
ASCENSION NO. 45

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
							DIRECTION DEGREES (IN)	SPEED KNOTS	
4010.4	800.3	25.6	5.3	28.0	1022.4	674.7	150.0	31.1	1.000267
4500.0	865.4	22.4	7.8	39.1	1015.4	671.3	151.5	23.9	1.000272
5000.0	850.3	21.4	7.6	41.0	1000.9	670.2	153.7	16.6	1.000269
5500.0	835.4	20.2	7.1	42.6	987.5	668.6	159.6	9.4	1.000265
6000.0	820.7	19.0	6.6	44.3	974.2	667.4	170.7	7.0	1.000260
6500.0	806.2	17.8	6.0	45.9	961.1	666.0	199.2	6.7	1.000256
7000.0	792.0	16.6	5.4	47.6	946.3	664.5	215.1	8.2	1.000252
7500.0	773.1	15.4	4.8	49.2	935.6	663.1	219.3	10.1	1.000248
8000.0	764.2	14.2	4.0	50.3	922.7	661.7	218.1	11.9	1.000243
8500.0	750.4	13.1	3.2	50.9	909.6	660.4	215.7	13.2	1.000238
9000.0	736.9	12.1	2.4	51.4	896.8	659.1	212.6	14.1	1.000234
9500.0	723.7	11.0	1.5	52.0	884.1	657.8	210.6	14.7	1.000229
10000.0	710.6	9.9	.7	52.5	871.7	656.5	211.1	14.8	1.000225
10500.0	697.3	8.8	-1.1	53.5	859.3	655.3	211.7	14.7	1.000220
11000.0	684.9	7.7	-1.4	54.4	846.7	654.0	214.2	14.0	1.000217
11500.0	672.3	6.6	-1.7	59.2	834.4	652.7	218.6	13.7	1.000214
12000.0	659.9	5.5	-1.1	62.1	822.2	651.4	220.3	14.4	1.000211
12500.0	647.8	4.5	-1.5	65.0	810.3	650.1	234.2	15.6	1.000207
13000.0	635.8	3.4	-2.0	67.8	798.5	648.6	242.4	17.4	1.000204
13500.0	624.1	2.3	-2.5	70.7	787.0	647.5	247.2	18.6	1.000201
14000.0	612.6	1.4	-3.7	69.0	775.1	646.4	249.6	19.1	1.000196
14500.0	601.1	.9	-6.0	59.8	762.2	645.7	246.6	19.9	1.000189
15000.0	589.8	.1	-6.0	63.7	750.1	644.8	245.7	21.0	1.000187
15500.0	578.6	-1.8	-6.0	67.6	738.2	643.8	243.9	22.7	1.000184
16000.0	567.7	-2.5	-6.1	71.5	726.5	642.8	242.5	24.7	1.000182
16500.0	557.0	-3.3	-6.2	75.5	715.0	641.6	240.5	25.4	1.000179
17000.0	546.5	-4.0	-7.2	74.1	703.7	640.6	233.1	25.5	1.000175
17500.0	536.1	-4.8	-10.0	63.6	692.5	639.8	233.4	24.4	1.000169
18000.0	525.8	-5.5	-13.1	51.9	681.4	636.7	226.1	22.7	1.000164
18500.0	515.6	-5.5	-16.7	49.6	670.5	637.7	222.4	21.9	1.000158

STATION ALTITUDE 4010.40 FEET MSL
20 OCT. 78 1400 HRS HST
ASCENSION NO. 45

UPPER AIR DATA
2930220045
NW 30

GEODETIC COORDINATES
32.88497 LAT DEG
106.49714 LONG DEG

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GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KIOTS	WIND DATA DIRECTION DEGREES (IN)	SPEED KIOTS	INDEX OF REFRACTION
19000.0	505.9	-6.3	35.0	659.9	636.7	221.0	21.5	1.000154
19500.0	496.1	-6.9	37.6	646.5	636.0	221.4	22.2	1.000152
20000.0	486.6	-7.1	43.2	636.5	635.8	222.4	23.3	1.000150
20500.0	477.1	-8.3	44.4	626.7	634.4	221.7	24.0	1.000147
21000.0	467.8	-9.5	45.7	617.5	633.0	220.0	24.4	1.000145
21500.0	458.7	-10.6	46.9	608.1	631.5	219.4	25.0	1.000142
22000.0	449.8	-11.9	47.2	599.1	630.0	219.5	25.7	1.000140
22500.0	440.8	-13.2	40.0	590.4	628.3	219.2	26.0	1.000136
23000.0	432.1	-14.6	32.9	581.9	626.6	218.5	26.0	1.000133
23500.0	423.5	-16.0	25.7	573.5	624.8	218.1	25.6	1.000130
24000.0	415.1	-17.3	19.0	565.1	623.2	217.7	25.4	1.000128
24500.0	406.7	-18.0	19.0	555.1	622.4	218.2	25.6	1.000125
25000.0	398.5	-18.7	19.8	545.6	621.5	219.4	25.9	1.000123
25500.0	390.4	-20.0	24.0	537.1	619.9	220.5	26.5	1.000121
26000.0	382.4	-21.3	28.3	528.8	618.5	221.4	27.2	1.000120
26500.0	374.6	-22.6	32.5	520.7	616.7	223.9	27.6	1.000118
27000.0	366.9	-23.9	36.8	512.7	615.1	232.9	28.1	1.000116
27500.0	359.4	-25.2	41.0	504.8	613.5	229.9	28.5	1.000114
28000.0	352.0	-26.4	48.2	496.7	612.1	229.7	30.2	1.000113
28500.0	344.6	-27.4	57.9	488.4	610.8	230.2	32.2	1.000111
29000.0	337.5	-28.5	67.6	480.2	609.5	230.5	33.2	1.000109
29500.0	330.4	-29.2	72.6	471.8	608.6	230.8	33.9	1.000108
30000.0	323.4	-30.1	68.7	463.4	607.5	230.9	34.8	1.000105
30500.0	316.6	-31.4	53.0	455.9	605.9	230.9	35.9	1.000103
31000.0	309.8	-32.6	53.6	448.6	604.3	232.1	38.0	1.000101
31500.0	303.2	-33.3	53.0	441.5	602.7	233.9	40.8	1.000100
32000.0	296.7	-35.0	48.4	433.9	601.3	235.6	43.1	1.000098
32500.0	290.3	-36.0	59.4	426.5	600.0	237.2	44.7	1.000096
33000.0	284.0	-37.2	54.3	419.5	598.5	238.1	45.4	1.000094
33500.0	277.8	-38.5	29.2**	412.4	596.8	238.5	44.8	1.000092

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UPPER AIR DATA
2930220045
11W 30

STATION ALTITUDE 4010.40 FEET MSL
20 OCT. 76 1400 HRS MST
ASCENSION NO. 45

GEODETIC COORDINATES
32.80497 LAT UFG
106.49714 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
34000.0	271.7	-39.9	23.0**	405.8	595.0	238.3	44.6	1.000091
34500.0	265.6	-41.4	16.8**	399.3	593.1	238.2	44.8	1.0000049
35000.0	259.8	-42.8	10.0**	392.9	591.2	238.2	45.3	1.0000088
35500.0	254.0	-44.3	4.4**	386.6	589.4	238.2	46.0	1.0000086
36000.0	248.3	-45.8		380.2	587.6	238.9	46.8	1.0000085
36500.0	242.7	-46.8		373.4	586.2	239.8	47.7	1.0000083
37000.0	237.1	-47.9		366.7	584.7	242.0	48.8	1.0000082
37500.0	231.7	-49.0		360.1	583.3	244.0	50.0	1.0000080
38000.0	226.4	-50.1		353.7	581.8	247.6	50.5	1.0000079
38500.0	221.2	-51.3		347.3	580.3	250.8	50.8	1.0000077
39000.0	216.2	-52.4		341.1	578.9	253.4	53.3	1.0000076
39500.0	211.1	-53.4		334.8	577.5	255.0	56.8	1.0000075
40000.0	206.2	-54.5		328.5	576.0	254.5	60.5	1.0000073
40500.0	201.4	-55.6		322.4	574.6	252.0	64.4	1.0000072
41000.0	196.8	-56.0		315.4	574.1			1.0000070
41500.0	192.0	-56.1		308.2	573.9			1.0000069
42000.0	187.4	-56.5		301.5	573.4			1.0000067
42500.0	183.0	-57.3		295.3	572.3			1.0000066
43000.0	178.6	-58.1		289.3	571.3			1.0000064
43500.0	174.3	-58.9		283.5	570.2			1.0000063
44000.0	170.1	-59.7		277.7	569.1			1.0000062
44500.0	166.1	-60.5		272.1	568.1			1.0000061
45000.0	162.1	-61.3		266.0	567.0			1.0000059
45500.0	158.2	-62.1		261.2	565.9			1.0000058

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4010.40 FEET MSL
20 OCT. 78
ASCENSION NO. 45

MANDATORY LEVELS
2930220045
NW 30
TABLE XIII.

GEODETIC COORDINATES
32.88497 LAT UFG
106.49714 LON LEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMID. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5000.	21.4	7.6	41.	155.7	10.5
800.0	6719.	17.3	5.7	47.	207.0	7.3
750.0	8515.	13.1	3.2	51.	215.0	13.2
700.0	10406.	9.0	-1.1	53.	211.3	14.8
650.0	12406.	4.7	-1.5	64.	232.0	15.4
600.0	14532.	.8	-6.0	60.	240.4	20.0
550.0	16815.	-3.0	-6.3	78.	236.9	25.5
500.0	19274.	-6.9	-19.7	55.	221.0	21.8
450.0	21954.	-11.6	-20.7	47.	219.5	25.6
400.0	24870.	-16.5	-36.3	19.	212.0	25.8
350.0	28055.	-26.6	-33.7	51.	229.8	30.7
300.0	31635.	-34.5	-40.7	53.	234.6	42.1
250.0	35770.	-45.3			238.0	40.5
200.0	40547.	-55.9				
175.0	43522.	-58.8				

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

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MRIN MANDATORY LEVELS
2930220043
NW 30
TABLE XIV.

STATION ALTITUDE 4010.40 FEET MSL
20 OCT. 76 1400 HRS MST
ASCENSION NO. 45

GEODETIC COORDINATES
32.84497 LAT DEG
106.49714 LON DEG

GEOCENTRAL ALTITUDE DECAMETERS	DIRECTION DEG (TR)	WIND DATA		E-W MPS	DLW FT DLP LEG C	TEMPERATURE		PRESSURE MILLIBARS
		SPEED MPS	N-S MPS			AIR DEG C		
1320.	9999.**	9999.**	-9999.**	-9999.**	99	-56.6		1.750+2
1236.	9999.**	9999.**	-9999.**	-9999.**	99	-55.9		2.000+2
1090.	239.	24.	12.	20.	99	-45.3		2.500+2
966.	235.	22.	13.	18.	06	-34.5		3.000+2
856.	230.	16.	10.	12.	07	-26.6		3.500+2
758.	219.	15.	10.	8.	18	-18.5		4.000+2
669.	220.	15.	10.	8.	09	-11.8		4.500+2
587.	221.	11.	6.	7.	13	-6.9		5.000+2
512.	239.	15.	7.	11.	05	-3.0		5.500+2
443.	248.	10.	4.	10.	07	.6		6.000+2
378.	233.	8.	5.	8.	06	4.7		6.500+2
317.	211.	6.	7.	4.	09	9.0		7.000+2
280.	216.	7.	6.	4.	10	13.1		7.500+2
205.	207.	4.	3.	2.	12	17.3		8.000+2
153.	154.	0.	0.	-4.	14	21.4		8.500+2

** WIND DATA NOT COMPUTED DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.